

2. DESCRIPTION OF A NEW GENUS OF THE FAMILY MELANIANA, AND OF MANY NEW SPECIES OF THE GENUS MELANIA, CHIEFLY COLLECTED BY HUGH CUMING, ESQ., DURING HIS ZOOLOGICAL VOYAGE IN THE EAST, AND NOW FIRST DESCRIBED. BY ISAAC LEA AND HENRY C. LEA, PHILADELPHIA *.

Genus PACHYCHILUS †.

Testa conica. Apertura ovata, basi integro. Labrum crassum. Columella supernè incrassata. Operculum suborbiculare, corneum.

The genus *Melania* has been found to embrace such a vast number of species in various parts of the globe, that it has become very desirable to separate any definite group with sufficient persistent characteristics. The thickened lip sufficiently distinguishes the proposed genus from *Melanopsis* and *Melania* ‡. It differs from *Melanopsis* also in its having no sinus, while it resembles it in the possession of a thickened columella above. From *Melania* it differs also in having this callous columella. The species on which it is proposed to found this genus has a mouth looking like a thick-lipped *Bulimus*. The operculum differs somewhat from that of any *Melanian* I have seen. Its polar point is subcentral, from which two or three spiral revolutions are made; then a thinner margin surrounds these spirals.

The animal has not been observed, and may and probably will prove very different from *Melania*. Its proper position, however, in the system will most likely be found to be between *Melanopsis* and *Melania*, and there I would at present place it.

A second and very distinct species may be added to this genus—the *Melania lævissima*, Sowerby, described in Deshayes' edition of Lamarck. It inhabits Colombia, and is a shorter, wider, and much thicker shell, with a large white mouth.

PACHYCHILUS CUMINGII. *P. testâ lævi, elevato-conicâ, subcrassâ, nitidâ, fusco-nebulosâ; spirâ elevatâ, acuminatâ; anfractibus undecim, convexiusculis; suturis linearibus; aperturâ parviusculâ, subrotundâ, ad basim rotundâ, intus fuscâ; labro valdè expanso; columellâ supernè incrassatâ.*

Hab. Large rivers, Copan, Central America.

Length 1.4, diam. .5 of an inch.

Remarks.—This is a very remarkable shell among the *Melaniens*. It is of fine symmetry, the whorls being very regular to the apex. The brownish cloudiness gives the whole surface a dark hue, while the smoothness of the whorls gives it almost a polished appearance. It differs very much in form from *Melania lævissima*, Sow., which naturally belongs to the same genus, and which is adopted above; but it has the same character of mouth and exterior colour. Both

* All the species described are in the Cabinets of Hugh Cuming and Isaac Lea.

† Παχὺς, thick, and χεῖλος, lip.

‡ Lamarck describes the family *Melaniens* as having a sharp outer lip, "le droit toujours tranchant;" but this genus naturally belongs to *Melania*, *Melanopsis*, and *Pirena*.

species under the microscope exhibit very minute revolving striæ. The aperture is rather more than one-fourth the length of the shell. The operculum has its polar point subcentral.

The genus *Melania* of Lamarck abounds in a most extensive number of species, and is undoubtedly the most interesting of the genera of the family *Melaniæ*. It is distributed round the whole circumference of the globe, and inhabits the fresh waters of America at least as far north as 45° latitude, and it probably exists quite as far south, as it is found in New Zealand. In the north of Europe there is not a single species known, while very few are found in the southern part of that quarter of the world. In the middle, southern and south-western portions of the United States, the greatest number of species seem to be developed on this continent; and in the States of Kentucky, Ohio, Tennessee and Alabama they are the most profuse, and present an almost endless variety of forms, extending to an incredible number of species. The rivers and lakes of India and Africa have not yet been well explored; but while they present some of the most striking and beautiful species, it may be doubted if they abound in the variety of forms which are found in the United States. The Philippine Islands form a most prolific district, where the development of these forms seems to have been greatly extended. Mr. Cuming, with an industry, energy and perseverance which portray the true naturalist, devoted several years to the Mollusca of this remarkable group of islands, and his reward has been, the discovery of a vast number of species heretofore unknown to science; and he well deserves the gratitude of all students of this branch of natural history for his devotion to the collection of a museum, almost, if not quite, unequalled in the Mollusca.

MELANIA CANALIS. *M. testâ lævi, acuto-conoideâ, subtenui, tenebroso-castanæ, flammis longitudinalibus ferrugineis ornatâ; spirâ elevatâ, ad apicem costatâ; suturis impressis canaliculatisque; anfractibus duodecim, subconvexis; aperturâ ovatâ, ad basim patulâ, intus albidâ.*

Hab. Small streams, island of Guimaras, Philippines.

Length 2·1, diam. ·6 of an inch.

Remarks.—This is rather a large and somewhat robust species. The full-grown specimens are of a dark chestnut-brown, the younger sometimes a pale horn-colour, with longitudinal flammate marks, nearly equidistant, and with distinct minute transverse striæ. The most remarkable character of this species is the impressed and rather sharp channel at the junction of the whorls. The aperture is nearly one-third the length of the shell, and the base is expanded, the columella below being flattened.

MELANIA FÆDA. *M. testâ lævi, conoideâ, subcrassâ, tenebroso-fuscâ, rufo-nebulosâ; spirâ subelevatâ; suturis subimpressis; anfractibus decem, planulatis; aperturâ ellipticâ, subcontractâ, ad basim subangulatâ, intus tenebroso-castanæ; labro margine cærulescente.*

Hab. Rocky stream, Java.

Length 1·6, diam. ·5 of an inch.

Remarks.—In the adult specimens the edge of the aperture is bluish white, and within more or less brown. In all cases the columella is white in the four specimens under examination. They are covered nearly over the whole surface with a black deposit of oxide of iron. Near the base there are seven to ten indistinct striæ. The aperture is about one-third the length of the shell. The operculum is ovate, and does not present any peculiar character.

MELANIA SOBRIA. *M. testâ lævi, acuto-conoïdæ, subcrassâ, luteo-corned; spirâ elevatâ, ad apicem costatâ; suturis impressis; anfractibus duodecim, planulatis; aperturâ parvâ, subovatâ, intus albidâ, ad basim rotundatâ; columellâ regulariter curvatâ.*

Hab. Very small streams, Siquijor, Philippines.

Length 1·5, diam. ·5 of an inch.

Remarks.—A very regularly formed, light-coloured species. There are a few indistinct striæ near the base. The sutures are very regular and thread-like. The upper whorls are slightly maculate, and those nearest to the apex minutely plicate. The aperture is rather more than the fourth of the length of the shell, and is rounded at the base of the columella.

MELANIA SUBULA. *M. testâ lævi, acuto-conoïdæ, tenui, castanæ; spirâ valdè elevatâ, acuminatâ; suturis impressis; anfractibus duodecim, subconvexis; aperturâ parvâ, contractâ, intus vel albidâ vel rufo-castanæ.*

Hab. Small river in the province of Ho Ho, isle of Panay, Philippines.

Length 1·8, diam. ·4 of an inch.

Remarks.—This is a delicately formed species, very much attenuated, with six or eight impressed, small striæ at the base. In the darker specimens, the upper part of the whorl at the suture is lighter-coloured than the other part. The upper whorls are finely striate. The aperture is small, about one-fourth the length of the shell, and rounded at the base of the columella.

MELANIA ACUS. *M. testâ lævi, conoïdæ, subtenui, corned; spirâ acuminatâ, ad apicem costatâ; suturis subimpressis; anfractibus undecim planulatis; aperturâ parvâ, ovatâ, intus cærulescente; columellâ regulariter curvatâ.*

Hab. Small stream, Guimarães, Philippines.

Length 1·1, diam. ·3 of an inch.

Remarks.—This is a regularly formed, small species. The specimens under examination are nearly covered with a deposit of oxide of iron, which on removal displays a horn-coloured epidermis. The aperture is nearly one-third the length of the shell, and is rounded at the base.

MELANIA DERMESTOIDEA. *M. testâ lævi, politâ, subcylindraceâ, crassâ, tenebroso-castanæ; spirâ subelevatâ; suturis impressis; anfractibus sex, subplanulatis; aperturâ ovatâ, ad basim canaliculatâ, intus rufescente; labro incrassato.*

Hab. Seychelles Islands.

Length .6, diam. .2 of an inch.

Remarks.—The most marked character of this species is the notched channel of the base, where the colour is rather darker. The outer lip is thick and rounded. The superior part of the whorl in some specimens is lighter in colour. In its general aspect this species resembles *Melania simplex*, Say. The epidermis is very lustrous. The aperture is nearly one-half the length of the shell.

MELANIA CONTRACTA. *M. testâ lævi, ovato-elongatâ, pallidâ, tenui; spirâ elevatâ; anfractibus novem, planulatis; aperturâ ovatâ, constrictâ, ad basim canaliculatâ, intus vel albidâ vel rufâ; columellâ contortâ reflexâque.*

Hab. Seychelles Islands.

Length .8, diam. .3 of an inch.

Remarks.—This, like the *dermestoidea*, herein described, from the same locality, is remarkable for the notched channel at the base. They may easily be distinguished by the *contracta* having a more elevated spire, greater number of whorls, being of a lighter colour, and in the aperture being longer and more twisted. There is a disposition in the upper part of the columella to be thickened and rufous, and the twist and backward turn are very remarkable. The aperture is about one-third the length of the shell.

MELANIA FERRUGINEA. *M. testâ lævi, nitidâ, ventricos-conoided, inflatâ, crassâ, ferrugined; spirâ subelevatâ; suturis valdè impressis; anfractibus sex, convexis; aperturâ magnâ, subrotundâ, intus albidâ.*

Hab. Zanzibar, East Africa.

Length .9, diam. .4 of an inch.

Remarks.—The rather inflated form of this species gives it the aspect of some of the *Paludinae*. A single specimen, and not an entirely perfect one, has only been submitted for examination. It seems to differ from any described species, while it has no very distinctive character. The aperture is very nearly one-half the length of the shell.

MELANIA IMPURA. *M. testâ lævi, subcylindraced, compressâ, subcrassâ, viridi-corned; spirâ subelevatâ; suturis valdè impressis; anfractibus planulatis, supra geniculatis; aperturâ ellipticâ, subcontractâ, ad basim retusâ, intus albidâ; columellâ regulariter incurvâ.*

Hab. Naga, province of South Cumarines, Luzon, Philippines.

Length .9, diam. .35 of an inch.

Remarks.—The angle on the superior portion of the whorls gives this species a very distinct aspect. This angle is not very acute, but it is very marked in all the four specimens under examination. The apex in each being decollate, the number of whorls cannot of course be correctly ascertained; there may be about seven. The colour of the epidermis is uniform and of a greenish horn-colour. The aperture is rather more than one-third the length of the shell, and is rounded and retuse at the base.

MELANIA COCHLIDIUM. *M. testâ lævi, subulatâ, subcrassâ, rufocorned; spirâ elevatâ, acuminatâ, ad apicem minutè plicatâ; suturis regulariter impressis; anfractibus tredecim, subcompressis, anfractu ultimo supra angulato, magno; aperturâ latè ovatâ, parvâ, ad basim retusâ, intus albidâ; columellâ regulariter incurvâ.*

Hab. Very small streams, islands of Siquijor and Guimaras, Philippines.

Length 1.5, diam. .5 of an inch.

Remarks.—This is a very remarkable species, having a single elevated, revolving rib on the superior part of the last whorl, which causes a somewhat impressed channel above. The four specimens under examination from Siquijor are fresh and with perfect epidermis, which varies on the younger specimens to rather a pale horn-colour, while the more mature ones are of a reddish horn-colour. The four from Guimaras are “dead shells,” rather more robust, with a portion only of the epidermis remaining, which is rufous. The aperture is about one-fourth of the length of the shell. The operculum has its polar point near the base on the left side.

MELANIA CINCTA. *M. testâ lævi, subulatâ, subtenui, rufocastaneâ; spirâ valdè elevatâ, acuminatâ, ad apicem plicatâ; suturis impressis, linearibus; anfractibus tredecim, subconvexis; anfractu ultimo uno-vittato; aperturâ dilatatâ, ovatâ, intus fusco fasciatâ, ad basim rotundâ; columellâ contortâ.*

Hab. India.

Length 2.2, diam. .6 of an inch.

Remarks.—The form of this species is very much like that of *Melania aculeus* (nobis), but it is a more attenuate species. The single light band on the lower whorl seems to be peculiar to this species. It is below the middle part of the whorl, and is distinctly visible on the inside in the three specimens under examination. The upper whorls have regular, oblique, somewhat distant folds, on two of the specimens, which are crossed by minute striæ. The lower part of the whorl has indistinct striæ. The aperture is not large, being less than one-fourth the length of the shell, and it is rounded at the base. The columella is much incurved.

MELANIA LANCEA. *M. testâ lævi, subulatâ, subtenui, corned; spirâ elevatâ, ad apicem striatâ; suturis impressis; anfractibus duodecim, convexis; aperturâ ovatâ, intus albidâ, ad basim rotundâ; columellâ angulariter incurvâ.*

Hab. Ohcataroa, Society Islands.

Length 1.6, diam. .5 of an inch.

Remarks.—This species is in form somewhat like the *M. aculeus* (nobis), but is a smaller shell and not quite so attenuate. In the four specimens under examination small striæ are distinctly marked on the superior or younger whorls, and on two of them some of the striæ are continuous on the lower whorls. The aperture is not large, being not quite one-third the length of the shell. The columella is much incurved and recurved.

MELANIA EPISCOPALIS. *M. testâ plicatâ, turritâ, subcrassâ, tenebroso-castanêâ; spirâ elevatâ; suturis impressis; anfractibus subconvexis, propè suturam superiorem concavis; plicis raris, subacuminatis; aperturâ magnâ, ellipticâ, intus cærulescente; columellâ contortâ.*

Hab. A sluggish river, Malacca.

Length 2·4, diam. ·8 of an inch.

Remarks.—This is a remarkable and interesting species, and differs from any which has been described, in having rather large and somewhat distant folds rising on the upper part into nodular points, in all the four specimens submitted for examination. The apex of these specimens being truncated, the number of whorls cannot be ascertained. A perfect adult would probably present about ten. The folds are distinct on the four lower whorls only. On the middle of the lower whorl there is a slightly elevated line, below which are about six obscure striæ. The aperture is large, and more than one-third the length of the shell; it is twisted, and has an elongated base. The columella is whitish and very much incurved. The operculum is more spiral than usual, and the polar point more toward the centre.

MELANIA BLATTA. *M. testâ plicatâ, elongatè conoided, crassâ, castaneo-nigricante; spirâ elevatâ, crebrè costatâ; anfractibus planulatis, infra suturas concavis; plicis crebris ornatis; aperturâ magnâ, ovatâ, supernè angulatâ, ad basim rotundâ, intus cæruleâ; columellâ tortâ, supernè incrassatâ.*

Hab. Rapid river and small streams, Luzon, Philippines.

Length 2·6, diam. ·7 of an inch.

Remarks.—A very dark-coloured and remarkably fine species, with numerous, nearly parallel, perpendicular folds, which number some eighteen or twenty, and exist on every whorl in the eight specimens under examination. The four large ones are truncate, but the younger and more perfect would indicate the existence of about ten whorls. It differs from the *episcopalis* in being more attenuate, in having more folds and a much less twisted columella. The aperture is large, and rather more than one-fourth the length of the shell.

MELANIA COSTELLARIS. *M. testâ plicatâ, supernè striatâ, acuminatâ, subcrassâ, tenebroso-castanêâ; spirâ elevatâ; suturis linearibus; anfractibus decem, subplanulatis; anfractu ultimo magno, geniculato; plicis numerosis; aperturâ parvâ, dilatatâ, ovatâ, supernè angulatâ, ad basim rotundâ, intus cærulescente; columellâ incurvâ.*

Hab. Small streams in the islands of Negros, Tanhay, Siquijor; Philippines.

Length 1·5, diam. ·5 of an inch.

Remarks.—The last whorl being angular gives this species a peculiar and remarkable character, and causes a channel immediately below the suture. Several of the specimens under examination have beautiful delicate impressed lines immediately above the sutures. In the superior whorls these lines cover the whole surface. The folds

terminate on the angle, and are disposed to be nodulous there. The aperture is rounded, angular above, and not quite one-third the length of the shell. The base of the shell is rounded.

MELANIA RECTA. *M. testâ plicatâ, attenuatâ, subcrassâ, tenebroso-castaneâ; spirâ valde elevatâ; suturis irregulariter impressis, subcanaliculatis; anfractibus tredecim, subplanulatis; plicis numerosis; aperturâ parvâ, ovatâ, ad basim rotundâ, intus cærulescente; columellâ incurvâ.*

Hab. Very small streams, Siquijor and isle of Negros, Philippines. Length 1·7, diam. ·5 of an inch.

Remarks.—In many of its characteristics this species is like the *M. costellaris*. It differs entirely, however, in the enlargement of the last whorl, the angle on the superior part of it, and in the channel below the suture, which are important characters in the *costellaris*. Nor has it the minute revolving lines. The folds are remarkably regular and distinct, and number about eleven on each whorl in the eight specimens under examination. On two individuals the epidermis remains quite perfect, and is deposited in regular, revolving striæ. The aperture is about one-third the length of the shell; it is rounded below and angular above, where it is slightly set off from the body of the whorl. The columella is but slightly curved.

MELANIA AUSTRALIS. *M. testâ plicatâ, conicâ, tenui, diaphand, rubiginoso-corned; spirâ costatâ, prope apicem turbinatâ; suturis impressis; anfractibus septem, convexis, ad basim striatis; plicis numerosis; aperturâ magnâ, ellipticâ, intus salmoniâ; columella tortâ; labro supernè emarginato.*

Hab. Victoria river, North Australia.

Length ·9, diam. ·4 of an inch.

Remarks.—This is a very distinct little species, and the sudden enlargement of the third whorl below the apex gives it a somewhat turbinated appearance. The folds do not on the lower whorl reach the suture, and above and below these folds there are minute revolving striæ. The aperture is more than one-third the length of the shell. The outer lip is slightly crenulate and remarkably incurved near to its junction with the body whorl.

MELANIA TORNATELLA. *M. testâ plicatâ, fusiformi, crassâ, corned, infernè lineatâ; spirâ acuminatâ; suturis irregulariter impressis; anfractibus novem, convexiusculis, ad apicem mucronatis, in medio concavis; plicis numerosis, crebris; aperturâ constrictâ, elongatâ, intus albâ; labro supernè incisâ; columellâ lævi, crassâ, contortâ, reflexâ.*

Hab. Shallow rivers, Tanhay, isle of Negros, Philippines.

Length ·9, diam. ·35 of an inch.

Remarks.—This belongs to a very remarkable group of *Melania*. The emargination of the outer lip, above the middle of the whorl, is strikingly characteristic of the group. It causes a slight flatness or convexity of the whorl, as well as a curve in the numerous ribs, which cover the whole surface in this species, except where it is superseded

by the transverse lines on the lower part of the whorl. These lines are remarkably parallel, regular and well-impressed, and in the four specimens under examination are six in number. The folds are like ribs, very numerous, closely set, and very distinct. The form of this species, described above, is very like *Tornatella*, and the twist in the columella also resembles that genus. The ribs continue on the apex and give it a scalariform appearance. The aperture is nearly one-half the length of the shell. The edge of the lip, below the emargination, is slightly crenulate. The columella is very thick towards and at the base, where it is so retuse as to permit the inside to be seen. One of the specimens is rubiginose at the base. No operculum accompanied the specimens.

MELANIA RUDIS. *M. testâ plicatâ, subfusiformi, crassâ, corneâ; spirâ subelevatâ; suturis irregulariter impressis; anfractibus planulatis transversim lineis impressis cinctis, supernè canaliculatis; plicis numerosis, crebris; aperturâ parvâ, ovatâ, intus albidâ; labro supernè emarginato; columellâ lævi, subcrassâ, tortâ.*

Hab. Amboyna.

Length 1.1, diam. .4 of an inch.

Remarks.—Allied to *Melania tornatella*, it forms one of the emarginate group, but differs in the size of the aperture and in the form of the ribs, which are transversely cut by numerous fine lines, in groups, which lines traverse the whole whorls. The aperture is about one-third the length of the shell, and the lip is crenulate. The three specimens under examination are all truncate at the apex, and the number of whorls therefore not ascertained. It has the spiral operculum usual to *Melania*.

MELANIA MICROSTOMA. *M. testâ plicatâ, subfusiformi, subcrassâ, luteo-corned; spirâ elevatâ; suturis irregulariter impressis; anfractibus octo, planulatis, transversim lineis impressis cinctis, supernè canaliculatis; plicis numerosis, crebris; aperturâ maximâ, ovatâ, ad basim truncatâ, intus cærulescente; labro supernè emarginato; columellâ lævi, ad basim subcrassâ tortâque.*

Hab. Mountain streams, isle of Negros, Philippines.

Length .9, diam. .3 of an inch.

Remarks.—This belongs to the group with emarginate lip, along with *M. rudis* and *M. tornatella*. It is a more slender species, more subulate, and has a smaller aperture than either. It takes more the form of *Terebra*. It has groups of lines which decussate the ribs as in the *rudis*. The aperture is not one-third the length of the shell, and the lip is crenulate. No operculum was received with the shells.

MELANIA TRANSVERSA. *M. testâ plicatâ, pyramidatâ, crassâ, corneâ, castaneo-maculatâ; spirâ elevatâ; suturis irregulariter impressis; anfractibus subconvexis, transversim lineis impressis cinctis; costellis verticalibus raris; aperturâ parvâ, obliquè transversâ, rhomboidâ, intus maculatâ et cærulescente; labro terebræformi, crenulato; columellâ contortâ, supernè incrassatâ, infernè emarginatâ.*

Hab. Guiana.

Length 1·6, diam. ·5 of an inch.

Remarks.—This species is remarkable for the unusual obliquity of its aperture and its auger-shaped lip. In its ribs and decussate striæ it resembles the group consisting of *M. tornatella*, *M. rudis* and *M. microstoma*, but it has not the emarginate lip and therefore does not belong to them. The emargination at the base of the columella is quite a different character, and is very remarkable in this species, representing as it does *the bite* of the auger. The chestnut-coloured spots are small, but so distinct as to mark the interior of the shell, which is white and thick. The two specimens under examination are both truncate at the apex, and the number of whorls not ascertained, probably about ten. The aperture is rather more than one-fourth the length of the shell. The operculum is spiral, with the polar point nearly in the centre and with at least five revolutions, which is unusual with *Melania*. It is allied to *M. truncata*, Lam. (*semiplicata*, Fer.), but is less cylindrical and differs somewhat in the aperture.

MELANIA MAXIMA. *M. testâ striatâ, elevato-conoïdè, crassâ, corned; spirâ valdè elevatâ; suturis linearibus; anfractibus duodecim, planulatis; striis magnis, raris, tenebrosis; aperturâ magnâ, rhomboïdè, intus albidâ; columellâ valdè contortâ.*

Hab. Copan, Central America.

Length 3, diam. 1·1 inches.

Remarks.—This very large species has a remarkable outline, forming a perfectly regular, rather obtuse cone above. The aperture is very large, and in the youngest of the three specimens the coloured striæ are very distinct within. Under the microscope minute revolving lines may be observed over all the whorls. The aperture is rather more than one-third the length of the shell. The operculum has five revolutions and is very much like that of *M. transversa*, the polar point being nearly central.

MELANIA MINDORIENSIS. *M. testâ striatâ, elevato-conoïdè, subtenui, pallidâ, ad apicem acuminatâ; spirâ elevatâ; suturis impressis; anfractibus duodecim, subconvexis, striis crebris; aperturâ magnâ, ellipticâ, intus albâ; columellâ incurvatâ tortâque.*

Hab. Small streams, Puerto Galero, isle of Mindoro, Philippines.

Length 1·9, diam. ·7 of an inch.

Remarks.—The outline of this species is very regular, tapering to a fine point. There are five specimens under examination, all of which have raised striæ over the whole of the body whorl. Some of the specimens have the two next whorls ribbed, which ribs, the striæ decussating, form granular elevations. The remaining whorls are perfectly smooth, with a few delicately impressed transverse lines. Some have brown spots, which towards the apex are more numerous and flammate. The aperture is more than one-third the length of the shell. The operculum has its polar point on the lower edge, and the curved lines of growth do not make one-eighth of a revolution.

MELANIA INDEFINITA. *M. testâ striatâ, elevato-conicâ, sub-*

crassd, tenebroso-corned; spirâ subelevatâ; suturis valde impressis; anfractibus convexis, infra suturas impressis, striis crebris impressis; aperturâ parvâ, ovatâ, intus cærulescente, ad basim rotundâ; columellâ regulariter incurvatâ.

Hab. Naga, Luzon, Philippines.

Length 1·6, diam. ·5 of an inch.

Remarks.—The species has a very close resemblance to the striate varieties of *M. Virginica*, Say. The three adult specimens under examination are truncate, and the number of whorls therefore not ascertainable, but probably about nine. The impressed revolving lines are somewhat distant, regular and delicate. Between these, under the microscope, may be seen very minute revolving striæ. The aperture is about one-fourth the length of the shell. The operculum has its polar point near to the edge of the lower margin.

MELANIA LUZONIENSIS. *M. testâ striatâ, conicâ, subtenui, tenebroso-corned; spirâ erosâ; suturis impressis; anfractibus sex, convexusculis, transversim lineis rugosis impressis cinctis; aperturâ magnâ, elongato-ellipticâ, intus rubiginosâ; columellâ albâ tortâque.*

Hab. Small streams, Calanang, province of Bai, Philippines.

Length 1·1, diam. ·5 of an inch.

Remarks.—There is no peculiarity in the outline of this species, and the most striking character is perhaps in the impressed lines, which are somewhat distant, having minute numerous wrinkles across the groove. They are very distinctly visible under the microscope, and do not seem to have been observed in any other species. The superior part of the whorls is disposed to be granose, and one specimen has four rows of granules. Immediately under the sutures there is a yellow line. The aperture is one-half the length of the shell. The operculum has its polar point close to the lower margin.

MELANIA ALBESCENS. *M. testâ striatâ, elevato-conicâ, subtenui, albidâ, lineis rufis interruptis ornatâ; spirâ acuminatâ; suturis impressis; anfractibus undecim, planiusculis, lineis transversis vix impressis; aperturâ ovato-oblongâ, intus albidâ, rufo-maculatâ, ad basim rotundâ; columellâ incurvâ.*

Hab. Small streams, isles of Guimaras, Negros and Siquijor, Philippines.

Length 2·5, diam. ·9 of an inch.

Remarks.—This is a very regularly formed and graceful species, with rather a high and tapering spire. The impressed revolving striæ are chiefly on the body whorl. The most striking characteristic is the numerous interrupted delicate brown lines, which cover nearly the whole of the whorls and are closer and better defined towards the apex. In some specimens there are beautiful brown spots on a white ground, below the sutures. The aperture is about one-third the length of the shell. The operculum has its polar point close to the lower margin on the left. There is a very great difference in the size and thickness of the specimens. Some of the old are very large, heavy, and covered with the oxide of iron, showing

beneath a brown epidermis and white nacre. In these the peritreme is very thick, and the columella more remarkably thick than heretofore noticed in any *Melanian*.

MELANIA HASTULA. *M. testâ striatâ, nonnunquam plicatâ, elongatè subulatâ, diaphanâ, tenui, fuscâ, striis transversis crebris costulas decussantibus; spirâ acuminatâ; suturis linearibus; anfractibus plano-convexis; aperturâ parvulâ; ovatâ, intus vel fuscâ vel albidd; columellâ incurvâ tortâque.*

Hab. Various streams of Siquijor, Cagayan, Mindanao, and other Philippine Islands.

Length 3·3, diam. ·8 of an inch.

Remarks.—A very attenuate and greatly varied species, some being smooth with few striæ, others with striæ over the whole surface, and others again with numerous folds. In some of the specimens under examination the apex is eroded in a very unusual manner, the outer portion of the whorls there being so much decomposed as to present little more than the central column. Some of the specimens are dark brown, others are horn-colour with brown spots. There are probably about twelve whorls. Although some of the specimens have more or less distinct, somewhat distant folds, there are others which have no folds whatever. This species is placed among the striate group, as striæ are found more or less developed on every specimen. The striæ immediately below the suture are more deeply impressed and cause a slight groove. A variety from Camiguin is flatter on the whorls and less disposed to plication. The aperture is not quite one-fourth the length of the shell, is rather open and somewhat patulous below. The operculum has its polar point near to the margin on the left.

MELANIA JUNCIA. *M. testâ striatâ, elongatè subulatâ, tenui, tenebroso-fuscâ, infra suturas luteo-lineatâ; spirâ attenuatâ; suturis valdè impressis, anfractibus undecim, convexis, lineis transversis impressis; aperturâ parvulâ, ovatâ, intus fuscâ; columellâ valdè incurvâ contortâque.*

Hab. Lake of Taal, province of Batanos, and small streams in Luzon, Philippines.

Length 2, diam. ·5 of an inch.

Remarks.—An attenuate and gracefully formed species. Some of the specimens are of a dark rich brown, others are flammate. Two have very small incipient folds on nearly all the whorls, others have a few towards the apex. From the same locality are four specimens, which, while they differ but little in form, are very different in colour, being yellowish, with longitudinal flammate brown marks. This variety answers very closely to *M. flammulata*, Von dem Busch, 'Conchylien,' &c. by Dr. Philippi, tab. 1. fig. 3, 4. The aperture is about one-fourth the length of the shell and is rather small, with a patulous lip having a whitish border. The operculum has its polar point rather near to the margin. Gualtierus (tab. 6. fig. G) gives a drawing of a freshwater shell closely resembling this variety. Another variety is rather thinner, diaphanous, horn-colour, and obscurely maculate.

MELANIA CONULUS. *M. testâ minutè et creberrimè striatâ, conicâ, subtenui, fuscâ; spirâ obtusâ; suturis linearibus; anfractibus septem, planulatis, uno-vittatis; aperturâ elongato-ovatâ, ad basim angulatâ, intus fuscâ; columellâ tortâ.*

Hab. Small streams, Fernando Po, West Africa.

Length 1·4, diam. ·5 of an inch.

Remarks.—This interesting species is remarkable for its peculiar striæ, which cover the whole surface of all the whorls. The lines are irregular, and so minute as to require the microscope to detect them. A little above the middle of the whorl there is an obscure, dark, rather broad band. The middle of the whorl is somewhat angular. The aperture is not quite one-half the length of the shell, and is somewhat angular below.

MELANIA OBRUTA. *M. testâ striatâ, conoideâ, crassâ, bivittatâ, fuscâ; spirâ subelevatâ; suturis impressis; anfractibus septem, convexiusculis, lineis crebris elevatis; aperturâ parvulâ, subpatulâ, intus albâ et bivittatâ, ad basim emarginatâ et retusâ; labro crenulato et arcuato.*

Hab. —?

Length 1·3, diam. ·5 of an inch.

Remarks.—In general form and outline this species is very like to the striate variety of *M. Virginica*, Say. It differs in being thicker and in having a crenulate and patulous lip. In the four specimens submitted, the two dark brown bands are beautifully distinct inside, and stop short of the margin. Three specimens have a suddenly enlarged body whorl. Two of the specimens have obscure, longitudinal brown marks. The aperture is about one-third the length of the shell, is very much curved on the edge of the lip, and disposed to be canaliculate at the base. The striæ are coarse and elevated.

MELANIA TURRICULUS. *M. testâ striatâ, conoideâ, subtenui, obscurè maculatâ, corneâ, spirâ subelevatâ; suturis impressis; anfractibus novem, convexiusculis, lineis subraris impressis, superne angulatis; aperturâ parvâ, subconstrictâ, intus albidâ et obscurè maculatâ, ad basim rotundâ; columellâ regulariter curvatâ.*

Hab. Small rivers, Calanang, province of Bai, Luzon, Philippines.

Length 1·2, diam. ·4 of an inch.

Remarks.—This species, like *M. obruta*, resembles in size and outline very closely *M. Virginica*, Say. It differs from the former in being less thick, in being maculate and not banded, and in having impressed lines. It differs from the latter in being maculate, and in being angular immediately under the suture. The aperture is rather more than one-third the length of the shell, angular above and rounded below. The operculum has its polar point somewhat removed from the lower margin.

MELANIA APIS. *M. testâ striatâ, conicâ, tenui, obscurè granosâ, rufo-castanè; spirâ obtusâ; suturis irregulariter impressis; anfractibus convexis, lineis paucis elevatis; aperturâ parvâ, sub-*

rotundā, intus rufā, ad basim angulatā; labro repando, rufo-marginato; columellā incrassatā.

Hab. Marshy places, Vera Cruz, Mexico.

Length .8, diam. .3 of an inch.

Remarks.—Neither of the four specimens under examination are perfect, all being much eroded at the apex. Under the microscope the surface may be observed to be papillose, a character rarely found in this genus, though not very uncommon in *Helix*. The aperture is rather more than one-third the length of the shell and is unusually rotund. The rufous line surrounds the peritreme. The aperture is reddish inside.

MELANIA CUMINGII. *M. testā striatā, turritā, supernè unocarinatā, subcrassā, tenebraso-fuscā; spirā valdè elevatā; suturis regulariter impressis; anfractibus planulatis, lineis raris impressis; aperturā magnā, subtriangulārī, intus cærulescente; columellā retusā contortāque.*

Hab. Very small streams, island of Siquijor, Philippines.

Length 2.5, diam. .7 of an inch.

Remarks.—This is a very remarkable species. A single specimen only was sent by Mr. Cuming, and this unfortunately is by no means perfect. There is a good deal of ferruginous matter deposited over the surface, and the apex is so much eroded that the number of whorls cannot be well ascertained, perhaps about nine. The turritid form of the shell is very notable. Immediately under the suture there is an elevated and cordlike line, slightly angular on the superior part. Below this the whorl is slightly impressed. Part of the surface is wrinkled by the transverse striæ decussating longitudinal lines. The aperture is about one-third the length of the shell, and remarkable for its triangular form. The columella is unusually white, which shows in contrast with the dark epidermis. The operculum is large and thick, having its polar point near to the lower border.

MELANIA DACTYLUS. *M. testā striatā, valdè elevatā, supernè costatā, crassā, vel fuscā vel luteo-cornē; spirā valdè elevatā; suturis impressis; anfractibus duodecim, convexis, lineis crebris elevatis ornatis; costellis verticalibus crebris; aperturā submagnā, subrotundatā, intus vel salmonid vel cæruleā; columellā incrassatā, salmonid tortāque.*

Hab. Small streams in Guimaras, Mindanao, Luzon and Seyte, Philippines.

Length 3.2, diam. 1 inch.

Remarks.—This is a remarkably fine, large, and protean species. There are about two dozen specimens under examination from various islands of the Philippines. The prevailing character of the surface is striate with decussating costæ on the superior whorls; but some specimens have these costæ enlarged on the lower whorls, instead of their having vanished, as on others. Some again have their costæ rising into a series of pointed tubercles. Under the microscope many numerous minute striæ may be observed to revolve parallel with the coarser ones. Another variety is quite smooth on the upper whorls,

with fewer striæ and costæ. This looks like an immature shell. The aspect of these three varieties is quite different, but I do not consider it safe to separate them into species. The aperture is rather more than one-fourth the length of the shell. The operculum is large, having several revolutions, and the polar point is near to the centre.

MELANIA CRENIFERA. *M. testâ granulâtâ, acuto-conicâ, subfusiformi, subtenui, corned; spirâ granulâtâ, acuminatâ; suturis irregulariter impressis; anfractibus novem, convexiusculis, ad basim striatis; aperturâ submagnâ, ovatâ, intus albidâ; columellâ albâ tortâque.*

Hab. Small river in Java.

Length .9, diam. .4 of an inch.

Remarks.—Three specimens under examination are all nearly covered with granules, a fourth has but few. It is a very symmetrical little species. The aperture is rather more than one-third the length of the shell. No opercula accompanied these specimens.

MELANIA NANA. *M. testâ granulâtâ, conicâ, fusiformi, tenui, diaphanâ, vel corned vel fuscâ, rufo-maculatâ; spirâ depressâ, granulâtâ; anfractibus sex, subplanulatis, ad basim striatis; suturis irregulariter impressis; aperturâ magnâ, ellipticâ, intus vel albidâ vel fuscâ; columellâ tortâ.*

Hab. Mountain streams, isle of Negros, Philippines.

Length .6, diam. .3 of an inch.

Remarks.—The colour varies in this species owing to the number of brown spots, which differ much in different specimens. One of those under examination is horn-coloured, with a few distinct brown spots; another is quite dark in consequence of the multiplicity of them. The largest granules are immediately below the suture, and the line there is disposed to be of lighter colour. The aperture is about one-half the length of the shell.

MELANIA TESSELLATA. *M. testâ granulâtâ, elevato-conicâ, crassâ, tenebroso-fuscâ; spirâ elevatâ, crebrè granulâtâ; anfractibus planulatis, ad basim striatis; suturis irregulariter impressis; aperturâ parvâ, ellipticâ, constrictâ, crenulatâ, intus tricotatâ, ad basim canaliculatâ; columellâ subrectâ.*

Hab. —?

Length 1.10, diam. .4 of an inch.

Remarks.—There is nothing striking in the general appearance of this shell; but in looking into the interior, there will be observed a character which has not been known to exist in any other species—three elevated, revolving ribs, terminating short of the outer lip. The columella is simple, nearly straight, and ends in the angle at the sinus. These remarkable ribs may involve a difference of organic structure of the animal, in which case a new genus would be required for this species. One of the three specimens is entirely white inside, the other two have dark bands. The apex being eroded in them all, the number of whorls cannot be ascertained, probably about nine. The aperture is about one-third the length of the shell. The operculum has its polar point near to the lower margin.

MELANIA CREBRUM. *M. testâ cancellatâ, elevato-conicâ, crassâ, tenebroso-castanêd; spirâ valdè elevatâ; anfractibus decem, convexiusculis, ad basim striis impressis; suturis impressis; aperturâ parvâ, ovatâ, intus albâ; ad basim rotundâ; columellâ incurvatâ.*

Hab. Small streams, Guimaras, Philippines.

Length 1·5, diam. ·5 of an inch.

Remarks.—The symmetry of the outline and the extreme regularity of the decussating lines over the whole of the whorls, except at the base, are distinguishing characteristics of this species. The elevated portions between the decussating lines are quadrangular and resemble brickwork. The four specimens submitted are all “dead shells,” and are partly decomposed towards the apex. The aperture is rather more than one-fourth the length of the shell.

MELANIA RETICULATA. *M. testâ cancellatâ, conicâ, crassâ, pallidâ; spirâ elevatâ; anfractibus septem, planulatis, crassè cancellatis, ad basim striatis; suturis impressis; aperturâ magnâ, trapezoided, ad basim angulatâ, intus albâ; columellâ incurvatâ, contortâque.*

Hab. China.

Length 1·8, diam. ·7 of an inch.

Remarks.—This is a very remarkable and distinct species, covered all over, except the lower part of the base whorl, with coarse, somewhat distant decussating striæ, which rise into nodes and form quadrangular areas. Altogether it is a rough *Cerithium*-looking species. The epidermis is remarkably thin and light-coloured, the upper portion of the spire being quite white in the two specimens under examination. The aperture is more than one-third the length of the shell.

MELANIA ACULEUS, Lea. *M. testâ lævi, nonnunquam striatâ vel granulatâ, elongatè subulatâ, crassâ vel subcrassâ, corned vel fusco-nigricante; spirâ acuminatâ; suturis linearibus; anfractibus planulatis; aperturâ ovatâ, intus cærulescente; labro expanso.*

Hab. Siquijor, Naga, Cagayan, and others of the Philippines.

Length 2·6, diam. ·7 of an inch.

Remarks.—When this species was described by J. Lea in 1832 (*Trans. Am. Phil. Soc.*), he had seen but a single specimen, which had neither granules nor striæ. Among the large quantity of this genus taken by Mr. Cuming in his Eastern voyage, were about forty specimens of this singularly protean species. Were there but few, and these as different as many of them are, no one would hesitate to consider them as distinct species. But the large number and extraordinary difference in them enables one, or rather compels one to keep them in a group as curious divergent varieties. When we compare the large smooth variety with the small variety covered with granules, it is difficult to believe that they may have come from a common parent, but the *nuance* is too complete in the series to admit of a doubt.

It was deemed advisable to re-describe this species, so that it might
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embrace the various forms which it takes in the specimens now submitted by Mr. Cuming from various localities.

MELANIA DIADEMA. *M. testá spinosá, acuminato-ovatá, transversim lineatá, subpapyraceá, diaphaná, pallio lutescente; spirá scalariformi, acutá; suturá lineatá; anfractibus octo, supernè angulatis, planis supra et infra; angulo spinis instructo; spinis magnis, crebris, regularibus, brevibus, eversis, aliquando decurrentibus; lineis transversis, minimis, decussatis; anfractu ultimo bullato, ad basim lineato; aperturá magná, ovatá; columellá albidá, incurvá; epidermide hispídá.*

Hab. Small streams, isle of Guimaras, Philippines.

Length 1·4, diam. ·8 of an inch.

Remarks.—Differs from *M. amarula* in the thinness of its substance, and regularity and closeness of its spines, which are all bent outwards, at a regular angle.

MELANIA CORNUTA. *M. testá spinosá, elongato-ovatá, crossá, fuscesciente vel viridesciente; spirá exsertá, scalariformi, apice truncatá; suturá lineari; anfractibus medio angulatis, supernè subconcavis; angulo spinis instructo; spinis magnis, brevibus, incurvis, raris, acutis, basi latissimis, distortis, decurrentibus, anticè canaliculatis; anfractu ultimo magno, ad basim transversim striatulo; aperturá magná, ovatá; columellá lacted.*

Hab. Madagascar.

Length 1·5, diam. ·9 of an inch.

Remarks.—The spines are short, stout, and irregularly bent, presenting the appearance of horns, and distinguishing the shell from *M. amarula*, which it otherwise somewhat resembles.

MELANIA ACANTHICA. *M. testá spinosá, ovato-turritá, varicosá, transversim lineatá, subtenui, fuscá; spirá elongatá, conicá, scalariformi; apice truncatá; suturá lineari; anfractibus supernè angulatis, varicibus distortis; angulo spinis instructo; varicibus magnis, regularibus, subobliquis, supernè in spinis productis; spinis longis, tenuibus, irregularibus, extortis; lineis transversis, crebris, parvis, subalternantibus; anfractu ultimo parvo, ad basim lineato; aperturá ellipticá, infernè effusá; labro infernè producto; columellá parvâ, infernè incrassatâ.*

Hab. Manilla and isle of Negros, Philippines.

Length ·8, diam. ·4 of an inch.

Remarks.—Bears some resemblance to *M. scabra*, Férussac, and *M. bellicosa*, Hinds.

MELANIA ZEYLANICA. *M. testá lævi, ovatá, crassá, nitidá, albidá aut virido-fuscá; badio flammulatá, spirá brevi, acuminatá, apice acutá, aliquando erodá; suturá lineari; anfractibus quinque, convexis, ad suturam superiorem impressis, maculis flammulatis aut sagittatis badiis; anfractu ultimo magno, bullato; basi lævi; aperturá ovato-rotundá, supernè angulatá, infernè rotundatá, intus albidá; columellá magnâ, albâ, supernè incrassatâ, infernè curvatâ.*

Hab. Seychelles and Ceylon.

Length .9, diam. .6 of an inch.

Remarks.—The markings are very variable, being sometimes oblique, zigzag lines, extending over the whole surface of the whorls, sometimes sagittate or short zigzag spots in transverse series. Indeed some specimens are of a uniform dark green. The last whorl sometimes has two impressed transverse lines. The mouth is nearly two-thirds the length of the shell.

MELANIA POLYGONATA. *M. testâ tuberculatâ, elevato-conicâ, striatâ, crassâ, nigrâ; spirâ elevatâ, conicâ, apice erosâ; suturâ pæne obsoletâ, flexuosâ; anfractibus supernè et infernè striatis; medio angulatis; angulo serie unicâ tuberculorum instructo; tuberculis maximis, transversè angulatis, lævibus; striis transversis raris; anfractu ultimo magno; basi crebrè striatâ; aperturâ supernè valdè acutâ, infernè productâ et effusâ, intus albidâ; columellâ albâ, flexuosâ; operculo parvo, subcentrali.*

Hab. Copan, Central America.

Length 3.5, diam. 1.3 inch.

Remarks.—One of the largest and finest of the *Melania*. The upper whorls are generally covered with a thick, smooth deposit, obliterating the sculpture. On them the tubercles appear to degenerate into elevated costæ. The operculum is much smaller than the mouth. The tubercles and striæ sometimes produce brown marks on the columella and inside the aperture.

MELANIA DENTICULATA. *M. testâ spinosâ, ovato-turritâ, transversim striatâ, denticulatâ, tenui, diaphanâ, ferrugined, maculis badiis minutis linearibus; spirâ exsertâ, conicâ, scalariformi, apice acuminatâ; suturâ lineari; anfractibus septem, supernè angulatis, angulo denticulatis; denticulis parvis, acutis, obliquis; striis transversis, parvis, alternantibus, rugosis, maculatis, lineolis longitudinalibus minutissimis decussatis; anfractu ultimo parvo, ad basim striato; aperturâ ovatâ, infernè effusâ; columellâ flexuosâ, tenui.*

Hab. Mountain streams, isle of Negros, Philippines.

Length .6, diam. .3 of an inch.

Remarks.—Allied to *M. spinulosa*, Lam., but may be distinguished by its abrupt denticulations.

MELANIA ARMILLATA. *M. testâ cancellatâ, ovato-turritâ, crassiusculâ, graniferâ, viridescenti; spirâ elevatâ, subovatâ, apice acutâ; suturâ parvâ, crenatâ; anfractibus undecim, planatis, propè suturam superiorem angulatis, supernè albidis, costis longitudinalibus obliquis graniferis crebris; granulis rotundatis, albidis; anfractu ultimo supernè compresso, infernè subturgido; basi transversè striatâ; aperturâ ovatâ, supernè acutè angulatâ, infernè rotundatâ et effusâ; labro infernè producto; columellâ infernè angulatâ, supernè rectâ.*

Hab. India.

Length 1.4, diam. .5 inch.

Remarks.—Immediately below the angle of the whorls there is

apt to be a larger series of granules, with a very small one succeeding it.

MELANIA COCHLEA. *M. testá subspinosá, turritá, costatá, striatá, tenui, fulvá, maculis badiis; spirá scalariformi, ovato-acuminatá, apice acutá; suturá lineari; anfractibus decem, infernè subconvexis, supernè angulatis et concavis; costis obliquis, longitudinalibus, anfractuum in angulo elevatis et acutè mucronatis, supernè vix obsoletis; striis transversis, minutis, aliquando obsoletis; anfractu ultimo parvo, ad basim striato; aperturá ovatá, supernè acutá, infernè effusá.*

Hab. —?

Length 1', diam. .4 of an inch.

Remarks.—On the last whorl of the only specimen submitted, the costæ are almost obsolete. The striæ are strongest near the sutures, and scarcely visible at the middle of the whorls.

MELANIA LATERITIA. *M. testá cancellatá, acutè ovatá, compressá, crassiusculá, striatá, graniferá, albidá, virido-fuscá, rufo fasciatá aut atrá; spirá elevatá, plerumque scalariformi, apice acutá aut erosá; suturá impressá, crenatá; anfractibus decem, planatis, supernè angulatis, supra angulum sæpe albidis; striis transversis crebris graniferis; granulis quadratis, abruptis, planatis, seriebus longitudinalibus positis; anfractu ultimo magno, subcompresso; basi graniferá; aperturá ovatá, supernè acutè angulatá et sinuatá, infernè latá, expansá et retusá, internè sæpe fasciatá; columellá contortá; operculo parvo, ovato.*

Hab. Philippines.

Length 1'6, diam. .7 of an inch.

Var. α. *Anfractibus supernè graniferis, infernè striis transversis impressis; basi vix lævi, striis raris.*

Var. β. *Striis graniferis alternantibus.*

Remarks.—A very variable species as to size, colour and sculpture. The operculum differs much in some individuals in both its shape and apex. This shell bears some resemblance to the *M. granifera*, Lam. Its most remarkable characteristic is its square, flattened granules, bearing some resemblance to brickwork.

MELANIA MODICELLA. *M. testá lævi, ovato-conicá, crassá, nitidá, virido-fuscá; spirá conicá, brevī, apice acutá, sæpe erosá; suturá lineari; anfractibus quinque, convexis, rapidè crescentibus, prope suturam superiorem depressis, prope suturam inferiorem striis parvis transversis duabus aut tribus; anfractu ultimo magno, medio striis tribus, basi lævi; aperturá ovato-rotundá, supernè subangulatá, infernè subeffusá, intus albidá; labro acuto; columellá lacted, curvatá; operculo ovato, subcentrali, concentrico.*

Hab. Timor.

Length .7, diam. .5 of an inch.

Remarks.—This shell and the *M. zeylanica* may perhaps be taken as the types of a new genus or subgenus. Further investigation with respect to the animal may decide; in the meantime, the name of

RIVULINA is proposed provisionally. The general outline and operculum are those of the **PALUDINA**. In old specimens the peritreme of the mouth is continuous, but there is only a slight depression behind the columella in place of an umbilicus. The upper whorls are occasionally faintly lined or spotted with brown.

MELANIA PAGODA. *M. testá spinosá, turritá, costatá, transversim striatá, tenui, diaphaná, corneá, maculis badiis minutis linearibus; spirá elongatá, subovatá, acuminatá, scalariformi; suturá lineari; anfractibus decem, supernè angulatis et subconcavis, angulo spinulosis; costulis obliquis longitudinalibus, infernè obsoletis, supernè in spinulas aut denticula eversa productis, in anfractibus superioribus creberrimis et magnis, inferioribus minoribus rarioribusque; striis transversis, parvis, crebris, alternantibus, maculatis, lineolis longitudinalibus decussatis; anfractu ultimo usque ad basim striato; aperturá ovatá, supernè acutá, infernè effusá.*

Hab. Isle of Guimaras, Philippines.

Length 1·4, diam. ·6 of an inch.

Remarks.—A beautiful little species, with irregular spines, very strongly marked on the upper whorls, but which sometimes diminish to denticulations on the lower. It can be mistaken for none of its congeners, except perhaps the *M. cochlea*.

3. DESCRIPTION OF FIVE NEW SPECIES OF ANODONTÆ, COLLECTED BY H. CUMING, ESQ. IN THE EAST INDIES. BY ISAAC LEA.

ANODONTA GRACILIS. *A. testá latá, subcylindraceá, inæquilaterali; valvulis tenuibus; natibus subprominentibus; epidermide luteá; margaritá vel albá vel purpureá.*

Hab. Dingle, Isle of Panay.

Diam. 1; length 1·7; breadth 3·4 inches.

Remarks.—This species is more cylindrical than is usual with the *Anodontæ*, and differs from the other species taken by Mr. Cuming in this character: it is rounded anteriorly, and is subangular posteriorly. The dorsal margin is nearly straight, the basal margin is slightly emarginate, the disc being disposed to be flattish. In the specimens under examination, the beaks are all more or less eroded, but in the youngest there are slight indications of undulations. The ligament is thin and long; the marks of growth are distant and rather dark, and the epidermis in the young is yellow or greenish, in the older it is darker and brown; the anterior cicatrices are distinct; the dorsal small, and placed in the cavity of the beaks.

The five species herein described are remarkable in the character of the dorsal line, which rises immediately under the margin into a dentoid line, somewhat lamellar, and approaching in its character the more distinct tooth of the genus *Dipsas* (Leach). In the younger specimens this is much more distinctly marked, and in the older it becomes obsolete. This group of *Anodontæ*, having this dentoid character, would seem to form a natural connexion on one side with